

We claim

- 1    1.-24. (cancelled)
- 1    25. (previously presented)   A method of selecting an asphalt emulsion mixture to be  
2    used for reconstructing a paved road, comprising:
  - 3       providing reclaimed asphalt pavement particles;
  - 4       selecting an emulsion;
  - 5       mixing said emulsion and said reclaimed asphalt pavement particles to form a  
6    proposed asphalt emulsion mixture;
  - 7       testing said proposed asphalt emulsion mixture for performance using a raveling  
8    test and a moisture susceptibility test; and
  - 9       selecting said asphalt emulsion mixture to be used for reconstructing said paved  
10   road after testing said proposed asphalt emulsion mixture for performance.
- 1    26. (previously presented)   The method of claim 25, further comprising:
  - 2       testing said proposed asphalt emulsion mixture for performance using a stability  
3    test; and
  - 4       selecting said asphalt emulsion mixture to be used for reconstructing said paved  
5    road after testing said proposed asphalt emulsion mixture for performance.
- 1    27. (previously presented)   The method of claim 26, further comprising:
  - 2       testing modulus of said proposed asphalt emulsion mixture; and
  - 3       selecting said asphalt emulsion mixture to be used for reconstructing said paved  
4    road after testing modulus of said proposed asphalt emulsion mixture.
- 1    28. (previously presented)   The method of claim 27, wherein resilient modulus is  
2    tested.

1 29. (previously presented) The method of claim 25, further comprising:  
2 testing modulus of said proposed asphalt emulsion mixture; and  
3 selecting said asphalt emulsion mixture to be used for reconstructing said paved road  
4 after testing modulus of said proposed asphalt emulsion mixture.

1 30. (previously presented) The method of claim 29, wherein resilient modulus is  
2 tested.

1 31. (previously presented) The method of claim 25, further comprising:  
2 testing said proposed asphalt emulsion mixture for performance using a thermal  
3 cracking test; and  
4 selecting said asphalt emulsion mixture to be used for reconstructing said paved  
5 road after testing thermal cracking of said proposed asphalt emulsion mixture.

1 32. (currently amended presented) The method of claim 25, further comprising:  
2 testing said proposed asphalt emulsion mixture for performance using a thermal  
3 cracking test and a stability test; and  
4 selecting said asphalt emulsion mixture to be used for reconstructing said paved  
5 road after testing thermal cracking and stability of said proposed asphalt emulsion  
6 mixture.

1 33. (previously presented) The method of claim 25, wherein said selected asphalt  
2 emulsion mixture comprises a cationic emulsifier.

1 34. (previously presented) The method of claim 25, further comprising:  
2 taking samples of said road; and  
3 using said samples to make said reclaimed asphalt pavement particles.

1 35. (previously presented) The method of claim 34, further comprising:

2           inspecting said samples to determine the composition of layers in said samples,  
3       the thickness of said layers, and variations between samples.

1   36. (previously presented)   The method of claim 34, wherein said samples are crushed  
2       to form reclaimed asphalt pavement particles.

1   37. (previously presented)   The method of claim 34, wherein said samples are  
2       representative of variations in the road.

1   38. (previously presented)   The method of claims 25, wherein at least two different  
2       proposed asphalt emulsion mixtures are formulated and tested for performance before  
3       said asphalt emulsion mixture to be used for reconstruction said paved road is selected.

1   39. (previously presented)   The method of claim 25, wherein said selected asphalt  
2       emulsion mixture ravel no more than about 2% by weight after curing for at least about  
3       4 hours.

1   40. (previously presented)   The method of claim 31, wherein said selected asphalt  
2       emulsion mixture has a critical cracking temperature that is at least as low as the possible  
3       coldest temperature of said road with 98% reliability.

1   41. (previously presented)   The method of claim 25, wherein said selected asphalt  
2       emulsion mixture has a retained strength, as determined by a moisture susceptibility test,  
3       of at least about 70%.

1   42. (previously presented)   A method of reconstructing a paved road, comprising:  
2       forming a proposed asphalt emulsion mixture from an emulsion and reclaimed  
3       asphalt pavement particles;  
4       testing said proposed asphalt emulsion mixture for performance using a raveling  
5       test and a moisture susceptibility test; and

6       selecting an asphalt emulsion mixture to be used for reconstructing said paved  
7   road after testing said proposed asphalt emulsion mixture for performance;  
8       removing pavement from said road to form reclaimed asphalt pavement particles,  
9   leaving at least about an inch of said pavement on said road;  
10      mixing said reclaimed asphalt pavement particles from said road with an emulsion  
11   to form said selected asphalt emulsion mixture; and  
12   applying said selected asphalt emulsion mixture to said partially reclaimed road so as to  
13   form a cold in-place recycling layer on said road.

1   43. (previously presented)   The method of claim 42, further comprising:  
2       inspecting said road to determine if said road is thick enough to leave at least  
3   about an inch base of pavement after removing pavement;  
4       determining if said road has a structurally sound base; and  
5       determining if said road has good drainage.

1   44. (currently amended)   The method of claim 42, further comprising:  
2       applying to said cold in-place recycling layer a wearing surface selected from the  
3   group consisting of a cold, hot, or warm mix overlay, a seal coat, a chip seal, a fog seal,  
4   ~~or other surface treatment or other acceptable road surface treatment.~~

1   45. (previously presented)   The product of the process of claim 42.

1   46. (new)   A method of selecting an asphalt emulsion mixture to be used for  
2   reconstructing a paved road, comprising:  
3       providing reclaimed asphalt pavement particles;  
4       selecting an emulsion;

5 mixing said emulsion and said reclaimed asphalt pavement particles to form a  
6 proposed asphalt emulsion mixture;

7 testing said proposed asphalt emulsion mixture for performance using a raveling  
8 test; and

9 selecting said asphalt emulsion mixture to be used for reconstructing said paved  
10 road after testing said proposed asphalt emulsion mixture for performance.

1 47. (new) The method of claim 46, further comprising:

2 testing said proposed asphalt emulsion mixture for performance using a stability  
3 test; and

4 selecting said asphalt emulsion mixture to be used for reconstructing said paved  
5 road after testing said proposed asphalt emulsion mixture for performance.

1 48. (new) The method of claim 47, further comprising:

2 testing modulus of said proposed asphalt emulsion mixture; and  
3 selecting said asphalt emulsion mixture to be used for reconstructing said paved  
4 road after testing modulus of said proposed asphalt emulsion mixture.

1 49. (new) The method of claim 48, wherein resilient modulus is tested.

1 50. (new) The method of claim 46, further comprising:

2 testing modulus of said proposed asphalt emulsion mixture; and  
3 selecting said asphalt emulsion mixture to be used for reconstructing said paved  
4 road after testing modulus of said proposed asphalt emulsion mixture.

1 51. (new) The method of claim 50, wherein resilient modulus is tested.